

KENTUCKY  
FIELD NOTES

SPRING/SUMMER 2022

# Cumberland Forest Update



Three years ago, The Nature Conservancy facilitated the acquisition of 253,000 acres of working forest across Virginia, Tennessee, and Kentucky. Called Cumberland Forest, this project was big (see acreage total above), innovative (impact investors provided the capital), complex (a forest carbon project and severed mineral rights just to name a few), and a long time coming (we had been negotiating the deal and raising the funding for nearly seven years). But after closing the acquisition, the most common theme of team calls—after a bit of celebrating—was, “and now the real work begins.”

Indeed, acquiring the property was not an end in and of itself, but instead provided an enormous opportunity to demonstrate success on a number of interconnected strategies. Taken together, we are working to prove that climate-smart, sustainable forestry in the Appalachians is good business and can yield lasting and scalable benefits to nature and local communities. This essay is too short to provide a comprehensive update, but I can confidently report that the core elements of the project are performing exceptionally well. Much of this issue of Field Notes focuses on some smaller but inspiring research, reforestation, and renewable energy projects taking place on or made possible by Cumberland Forest.

Cumberland Forest provides a host of other benefits as well. One is how thoroughly it has removed state borders when it comes to how Virginia, Tennessee, and Kentucky staff work on this project. All our victories are shared victories. All our challenges are shared challenges. A wonderful example of the former is that the Tennessee Wildlife Resources Agency recently acquired a permanent conservation and recreational access easement on the 43,000 acres of the Cumberland Forest in the Volunteer State. Our hats are off to our colleagues to the south, and their huge victory inspires us as we work on a similar opportunity here in Kentucky.

Another benefit is that the project deepens our relationship with established partners like Kentucky Department of Fish and Wildlife Resources and greatly expands our work with terrific newer partners like the Mountain Association, Rocky Mountain Elk Foundation, and Green Forests Work. Readers of Field Notes know that virtually every conservation project we undertake is done with partners, and something as big, bold, and new as Cumberland Forest is no exception.

I write this essay on March 21, the first official day of spring. I hope that in addition to staying abreast of our work, you are finding time outside, enjoying the wonders of this season of renewal. As always, I am so grateful for your support.

See you outside,

David Phemister  
Kentucky State Director

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# New Science for PRESCRIBED FIRE

Chris Minor has spent much of his career driving the back roads of Kentucky, looking for indicator species. These are trees, grasses, and other vegetation that indicate what a given area might have looked like before settlement. These species can help Minor choose areas to restore using prescribed fire.

Now, a new technology will assist Minor, who is the Kentucky chapter's director of land management and fire manager. The new technology, called ecological zone mapping, will identify these historical conditions using aerial imagery and digital elevation models. Once the mapping is complete, Minor will be able to prioritize the most critical lands in need of restoration.

"We're trying to identify where fire will be most beneficial. Historically, fire was one of the most ecologically important disturbances across a variety of habitats in Kentucky," says Minor. "Native Americans used fire to improve habitat, and lightning ignited frequent low intensity burns that benefited fire adapted ecosystems."

Disturbances like fire can trigger important restoration processes for many species, particularly those that thrive in open areas. Fire eliminates woody growth and cuts back less desired species that may encroach on the forest floor, creating the open conditions that oak, short-leaf pine, warm season grasses and many other native plants need to thrive and reproduce.

"We're going to have the entire Central Appalachians mapped," Minor says. "These maps will tell us where to focus our efforts

as we work with partners to identify restoration projects within this landscape."

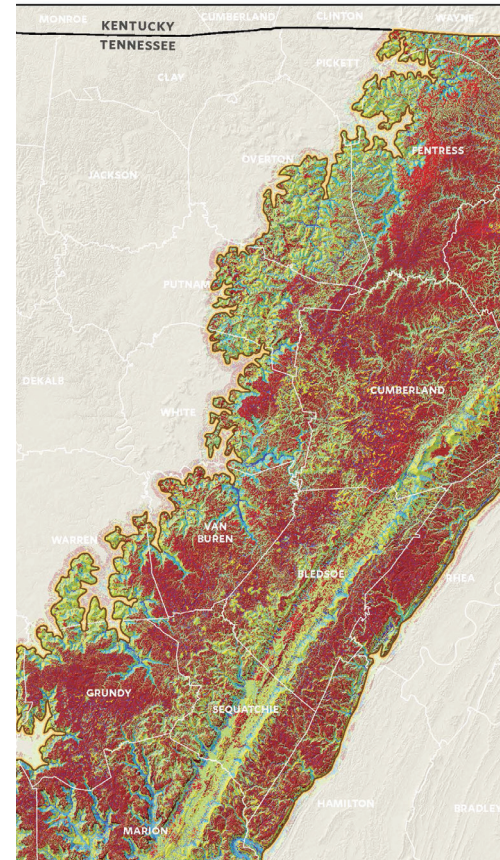
Katherine Medlock, Southern Appalachian program director for The Nature Conservancy, says the maps are a big step forward in understanding where and how TNC will do restoration work. "We've known for a long time that we need to restore fire to the Appalachians," she says. "This data tells us the places that are most important for restoration. We've never had that before."

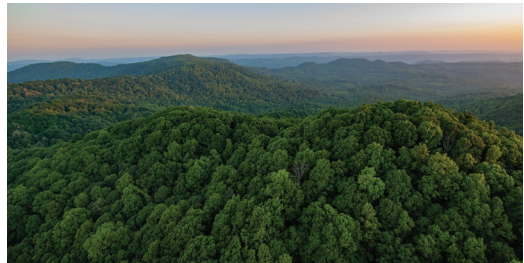
Steve Simon, a retired U.S. Forest Service ecologist, creates these maps. Simon has now done this work all over the southeast.

"Steve goes out in the field and gathers thousands of references," Medlock says. "It's a modeled map, but it requires a lot of field work to generate an accurate model. He can tell by looking at stumps what habitat should be here. He also includes other expert review in his efforts. This technology is informed by so much on-the-ground work."

Simon has finished mapping Tennessee, where Minor and his team also conduct prescribed burns. The process has just begun for Kentucky. When complete, the maps will give Minor a much better picture of the past to help shape our restoration work in the future.

"These maps become the base layers for all of our conversations about restoration," says Medlock. "Where we want to do it, prioritizing even how we do it—this becomes a touchstone for that. It's like our Rosetta Stone for restoration."





## Studying ELK ON ATAYA

The Nature Conservancy's nearly 55,000-acre Ataya property in the Cumberland Forest Project features some of the best elk habitat in eastern Kentucky. Recently, the Kentucky Department of Fish and Wildlife Resources (Kentucky Fish and Wildlife) and the Rocky Mountain Elk Foundation conducted a research and relocation project on Ataya in partnership with TNC. Researchers trapped 18 elk from this Bell County property near Middlesboro, fitted them with GPS collars and other tracking devices, and transported six of the elk to McCreary County. The remaining elk were released at their capture sites. The project intends to study the elk long-term and establish a permanent herd in McCreary County for the public to enjoy on Daniel Boone National Forest.

"The elk research project at Kentucky Fish and Wildlife is trying to keep 100 elk collared per year, plus tags on females and calves," says Chris Garland, Central Appalachians program director for TNC. "The project is getting a lot of good data on movement, calf survival, and birth rates."

Garland says Ataya has been a hub for elk research in recent years. The project benefits Kentucky Fish and Wildlife, which learns more about its elk herd, and TNC, which learns more about the Ataya property. "We partner with them on research, and they partner with us on habitat," Garland says. "When we work together, we all benefit."

CLOCKWISE FROM TOP LEFT Researchers receive an elk suspended from a helicopter during the recent project © Rocky Mountain Elk Foundation; An elk's eyes are covered to keep the animal calm during research © Rocky Mountain Elk Foundation; Elk are released in McCreary County after relocation from Bell County © Steven Dobey, Rocky Mountain Elk Foundation; The Ataya property in the Cumberland Forest Project was the site of the elk research project © Cameron Davidson; Researchers hold an elk to perform testing and add a tracking device © Steven Dobey, Rocky Mountain Elk Foundation



### Partnering for Public Access

Ever since we helped acquire the Ataya portion of Cumberland Forest, TNC, working as the managing partner of Cumberland Forest LP, has maintained a Wildlife Management Area agreement with Kentucky Fish and Wildlife. This agreement creates public access and recreational opportunities, including watching and hunting elk. Opportunity for both is excellent across the property. The area is also open for deer, turkey, and small game hunting.

“TNC is an ideal partner because it understand the habitat needs,” says John Hast, elk program coordinator for Kentucky Fish and Wildlife. “Anytime you’re doing habitat work for elk, you’re benefiting quail, cerulean warblers, short-eared owls, and other important species.”

Hast and other researchers consult with Chris Minor, the Kentucky chapter’s director of land management and fire manager, regarding habitat work involving prescribed fire. With lead partner,

Green Forests Works, TNC also started reforestation work on old mine lands in spring 2022.

“TNC does a great job of balancing everything that the property has to offer,” says Hast. “There’s a timber component, reforestation, and mining reclamation going on. It’s one of our most sought-after areas to hunt. I use our agreement with TNC as an example for other prospective public access and habitat partnerships in the Elk Zone. It’s a holistic approach to managing a property.”

Partnerships have been critical for Kentucky Fish and Wildlife since it first began restoring elk to eastern Kentucky in 1997. The state has relatively little public property for wildlife watchers and hunters to enjoy, and it has no permanent ownership in the Elk Zone. Temporary agreements are a partial solution, but ultimately, TNC and Kentucky Fish and Wildlife want to see the agency acquire permanent conservation and recreation access rights on Ataya.

“Most of the land in the Elk Zone is privately owned, so anything we can do to expand public hunting land is essential,” says Kevin Kelley, communications director for Kentucky Fish and Wildlife. “The opportunity on Ataya is historic, especially in terms of the size of the property.”

### Healthy Elk, Healthy Economy

In the 25 years since the first elk stepped off a trailer into eastern Kentucky, the state’s herd has become the largest east of the Rocky Mountains. Research projects like the one on Ataya yield important data on the herd’s health, so wildlife managers can ensure the elk population remains

strong and healthy.

“More than a million people in Kentucky actively watch wildlife,” says Kelley. “This generates over a billion dollars in economic impact in the Commonwealth. Hunting produces another \$1.5 billion in economic benefits to our state.”

Steven Dobe, eastern U.S. conservation program manager with the Rocky Mountain Elk Foundation, says small local economies benefit most. “Elk on the landscape facilitate hunting, which brings in money from pre-season scouting trips, lodging, food, and fuel,” he says. “It’s a little tough to view elk in Kentucky, but with more public land and some additional infrastructure I see elk viewing becoming a significant component to these local economies.”

Economic impact from hunting and wildlife watching extends beyond elk. All species that benefit from native grassland and open woodland savanna habitat thrive alongside elk, including wild turkeys, deer, migratory and resident songbirds, small game, and even black bears.

“We are always looking to help facilitate improved habitat, and are excited to see that translate into economic opportunities locally” says Dobe. “This is a great partnership between Kentucky Fish and Wildlife, the Rocky Mountain Elk Foundation, and TNC and a win for people and nature.”

# Donating LAND TO PARTNERS

The Nature Conservancy recently donated two tracts of land to the Office of Kentucky Nature Preserves (OKNP). The donations streamline land management efforts for the Kentucky chapter while adding valuable land to our partner's holdings.

"These tracts are special for the rare plants found on each one," says Holly Whiteman, protection associate for the Kentucky chapter. "OKNP has the capabilities to manage and protect those species. Both tracts are adjacent to land they already own, so it just made sense to donate these tracts to this trusted partner."

Josh Lillpop, natural areas branch manager for OKNP, says both tracts protect important natural communities and rare species. "The Hardin County tract

protects an extremely rare flower, while the Fleming County tract features the rare Short's Goldenrod," Lillpop says. "That tract will become part of Short's Goldenrod State Nature Preserve."

**"It just made sense to donate these tracts to a trusted partner."**

Holly Whiteman

The Hardin County property will remain closed because of the importance and sensitivity of the species that occur there. Management efforts will include using prescribed fire to control woody vegetation and maintain open glade habitats.

"We expect to include the Fleming County tract in a larger grassland

restoration project," Lillpop says. "That land is associated with an old buffalo trace. We believe its habitat was maintained by bison moving through the area. Without bison, we use fire to maintain the habitat."

A buffalo trace was a natural migration path that bison used to travel between areas while seeking food, water, and minerals. These large animals made a big impact along their way. Short's Goldenrod occurs in areas where the bison would disperse and eat.

"Bison would trample down the woody areas, which would help maintain those areas as more open communities," says Lillpop. "Fire does that in the absence of bison—it maintains an open woodland and grassland."



## Office of Kentucky Nature Preserves

OKNP is the state's heritage program, responsible for documenting and protecting Kentucky's biodiversity. It maintains a database of biological information and helps people understand how their actions affect all species.

"We have partnered with TNC on prescribed fire for close to 20 years," says Josh Lillpop, natural areas branch manager for OKNP. "Both of our programs are relatively small, so cooperation is essential to increase capacities and efficiency. Simply stated, we achieve much more together than we ever could alone."

TNC also partners with OKNP on land acquisition and management of several preserves, including Bad Branch State Nature Preserve. But it is fire management that brings the partners together most.

"I know I can call upon them, and they can call upon me, to meet our fire crew needs," says Chris Minor, director of land management and fire manager. "That kind of partner cooperation is critical to the success of our fire program."

# Solar ENERGY FOR MIDDLESBORO

The mineral rights on the Cumberland Forest project are severed. While mineral extraction across the entire 253,000-acre property is relatively minor and declining, some ongoing work generates royalties for the landowner. Before we facilitated the Cumberland Forest acquisition in 2019, The Nature Conservancy determined those royalties would not benefit us or the project's investors but instead the local communities in Virginia, Tennessee, and Kentucky. As far as we know, the decision to forgo royalties and opt instead for direct reinvestment in the community is the first of its kind in the Appalachians.

To help us invest these funds wisely, TNC turned to the Mountain Association, a partner with tremendous experience and deep roots in Appalachian communities. One promising idea that emerged right away was helping underwrite community solar projects. These projects reduce greenhouse gas emissions and yearly energy costs, but a lack of upfront capital investments can represent a barrier. "We realized our community funds could make a real difference," said Heather Majors, director of external affairs for the Kentucky chapter.

After reviewing a number of potential projects, TNC and Mountain Association worked with Middlesboro Mayor Rick Nelson to select a rooftop solar installation on the Middlesboro Community Center. "The center is the



Solar panels have been installed at Homes Inc. in Whitesburg, KY. Similar panels will soon be installed at the Middlesboro community center © Mountain Association

only city-owned building large enough to host everything from a birthday party to a wedding," Nelson says. "The adjoining pool makes the site even more appealing to the community."

Majors says the project will save the city approximately \$4,000 annually, enabling those funds to be reinvested into the community. "Another exciting part of this project is to see solar being used in a place long associated with coal mining," she says.

Mayor Nelson was especially excited about the project because the center is an important gathering space for the community. In addition to the pool, the center features a gymnasium, meeting rooms, and a kitchen.

"It is a great location for a clean energy project," says Josh Bills, a certified energy manager with Mountain Association. "There will be a display for people to see when they come in, with an image of the solar project and a monitor tracking electricity generation."

Bills says the solar project will do much more than just cut energy costs. Introducing solar into a community that has not experienced it yet is the biggest goal, he says.

"Once people see how a solar project works, it is empowering," says Bills. "In our experience, this is a driver for more clean energy projects. People get to see it, witness the impacts on the monthly electric bills, and it can be a catalyst for similar projects."

These smaller projects, like putting rooftop solar on a home or a community building, are called distributed solar projects. Some argue that small solar projects don't make a big impact, but Bills suggests that changing a culture one electric bill at a time can indeed be important.

"Rooftop solar can make a lot of sense," says Bills. "It has a multiplying effect on supporting local economies. Big projects, such as large solar arrays on former mine lands, are important, too. Really we need projects at all scales."

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